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More on soybean seed treatments in 2001

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Abstract

In a previous issue of the *Integrated Crop Management* newsletter, I [discussed](#) how to handle seed treatments for low-quality soybean seeds. I have received more questions on seed treatments and the current article addresses some of these questions. Compared with the last few seasons, this spring is wet and cool. If you plant soybean seed early to increase the probability of maximum yield, you will be planting in soil that is cooler than usual. Thus, a common question is, How does the wet and cool soil affect seedling diseases?

Keywords

Plant Pathology

Disciplines

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INTEGRATED CROP MANAGEMENT

More on soybean seed treatments in 2001

In a previous issue of the *Integrated Crop Management* newsletter, I discussed [1] how to handle seed treatments for low-quality soybean seeds. I have received more questions on seed treatments and the current article addresses some of these questions.

Compared with the last few seasons, this spring is wet and cool. If you plant soybean seed early to increase the probability of maximum yield, you will be planting in soil that is cooler than usual. Thus, a common question is, **How does the wet and cool soil affect seedling diseases?** The effects are twofold. First, cool and wet soil slows soybean germination and emergence, which is disadvantageous to stand establishment because the longer the seeds stay in the soil, the greater the chance for fungi to infect the seeds. Second, cool-temperature fungal pathogens, *Pythium* and *Fusarium*, are more active in cool and wet soil than in warm dry soil. Seeds planted in cool soil also take longer to germinate and emerge, increasing the chance of pathogen attack. Seeds planted in cool and wet soils often have higher risk of infection by these two diseases, especially for the low-quality seeds that do not have high vigor.

Research shows that in a wet and cool planting season, *Pythium* causes more seed rot or postemergence damping-off than other fungal pathogens. Therefore, control should be aimed at this fungus for early-planted soybean. *Fusarium* fungi also cause seedling disease in cool and wet soils but damping-off by *Fusarium* is less prevalent compared with *Pythium*. Data from Iowa show that *Fusarium* causes less than 15 percent stand establishment problems. However, because the *Fusarium* fungus that causes sudden death syndrome also infects seedlings when soil is cool and wet, risk of SDS infection increases in cool and wet soils.

Use the above-mentioned information to assess the risk of seedling diseases in this spring planting. However, keep in mind that disease risk varies from field to field. For many fields early planting does not seem to be associated with greater seedling diseases. For some fields, risk can be high, especially for those fields that had a stand establishment problem in the past.

If the risk of seedling disease is high in your fields, consider using seed treated with fungicides. There are many formulas available on the market for controlling soybean seedling diseases and for improving stand establishment. Most seed treatment formulas consist of several compounds. Consider using chemicals that contain Apron or metalaxyl, which is effective to control *Pythium* and *Phytophthora*. In addition to Apron, many formulas also have compounds effective to other fungi such as *Fusarium* and *Rhizoctonia*.

For past 2 years, ISU faculty and staff have tested several seed treatments made by two companies in fields of high disease pressure. Apron TL + Agrosol T and Apron TL + Agrosol

F from Wilfarm (now Agrilience) gave very good results. We also tested Syngeta's formulas, including ApronMaxx RTA (Ready to Apply), and they also significantly improved stand establishment in our tests. The RTA formula is for on-farm application, which is useful if you make a seed treatment decision after purchasing untreated seeds or if you want to treat seed at replanting.

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